Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSE C. D. MACEDO

Appeal No. 1998-1165
Application No. 08/410,586

ON BRIEF

Before GARRIS, OWENS, and LIEBERMAN, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 11 through 19, which are all the claims pending in this application.

THE INVENTION

The invention is directed to a fluidizable cracking catalyst comprising crystalline zeolitic alumino silicate and modified alumina. The modified alumina is prepared by reacting hydrated alumina with an aqueous solution of a monocarboxylic acid having 1 to 3 carbon atoms. Other features are described in the illustrative claims below.

THE CLAIMS

Claims 11 and 19 are illustrative of appellants' invention and are reproduced below.

11. A fluidizable cracking catalyst containing a matrix, from about 5 to about 50 wt.% of a crystalline, zeolitic aluminosilicate, and from about 2 to about 80 wt.% of a modified alumina prepared by a process comprising a step of contacting a hydrated alumina at a temperature in the range of from about 25° 110°C for a period in the range of from about 1 to about 100 hours with an aqueous solution of a monocarboxylic acid having from 1 to about 3 carbon atoms, the end pH being about 4 or less, and isolating, washing and drying the solid reaction product.

19. A fluidizable cracking catalyst comprising a matrix, from about 5 to about 50 weight percent of a crystalline, zeolitic aluminosilicate and from about 2 to about 80 weight percent of a modified alumina having a pore size distribution, determined after calcining said alumina at 788°C for 3 hours, and with reference to a nitrogen desorption curve, such as to give an average pore diameter in the range of from about 2 to about 14 nm, with at least about 60 percent of the total pore volume being in pores having a diameter in the range of from about 2 to about 20 nm, said pore size distribution having been determined on the alum the remaining catalyst components.

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references.

Gladrow et al. (Gladrow '818) 3,326,818 June 20, 1967
Gladrow (Gladrow '309) 4,283,309 Aug. 11, 1981

THE REJECTIONS

Claims 11 through 18 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gladrow '818. [1],[2]

Claim 19 stands rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gladrow '309.

Claims 11 through 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gladrow '309 combined with Gladrow '818.

OPINION

The Rejections under 35 U.S.C. § 103

We have carefully considered all of the arguments advanced by the appellant and the examiner and agree with the appellant that the rejections of claims 11 through 18 under section 102(b) as anticipated by Gladrow '818 and the rejection of claim 19 over Gladrow '309 under section 103(a) are not well founded. Accordingly, we reverse these rejections. We agree with the examiner that the rejections of claims 11 through 18 under section 103(a) as being unpatentable over Gladrow '818 is well founded. Accordingly, we affirm this rejection.

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[1] The final rejection dated January 25, 1996 included claim 19 in the instant rejection. In the Answer, however, a new ground of rejection has been entered for claim 19, and the rejection of record has apparently been withdrawn so as to no longer include this claim. See Supplemental Answer, page 4

[2] The rejection of claims 11 through 19 under 35 U.S.C. § 103 over the combined teachings of Gladrow '309 and Horzepa have been withdrawn. See Answer, page 3.

As an initial matter, the appellant submits that all of the rejected claims do not stand or fall together. See Brief, page 2. We find however that separate arguments are presented only with respect to claims 18 and 19. See Brief, page 9. Accordingly, we limit our consideration of the claimed subject matter to independent claims 11 and 19 and dependent claim 18. See 37 CFR § 1.192(c)(7) and (8)(1995).

The Rejections Over Gladrow '818

We find that Gladrow '818 discloses crystalline alumino-silicate zeolite, column 1, line 13, which is used in fluidized bed operations. See column 1, line 42. The catalyst is useful for hydro cracking. See column 4, line 20. The catalysts contain a major amount of crystalline alumino silicate zeolite, 51 to 95 weight percent and a minor amount of binder, 5 to 49 weight percent. See column 2, lines 21-31. The catalyst is mixed with a dry gel binding agent which contains a substantial amount of a peptizing agent. See column 1, lines 47-49. The term "peptizing agent" as used in the reference is intended to mean an agent capable of reverting the solidified gel back to a colloidal suspension when the gel is contacted with water. See column 2, lines 25-28. The peptizing agent may be a diluted solution of a carboxylic acid such as formic and acetic acid. See column 4, lines 69-71. Propionic acid is also disclosed. See column 5, lines 51-53. We find that Gladrow '818 discloses the presence of a sufficient peptizing agent to thoroughly wet the mixture during the mixing operation, e.g., 5 to 25 weight percent. See column 2, lines 32-33 and column 5, lines 3-7. We find that this amount of acid overlaps that disclosed by appellant wherein

the aqueous acid generally contains from about 10 to 75 weight percent of organic acid. See specification, page 5. We further find that the amount of acid disclosed in the specification refers to the acid alone. In contrast, the amount of acid disclosed in Gladrow '818 is based on the total weight of the binding agent. See column 2, lines 22-23. Accordingly, the weight percent of acid utilized by the appellant in the specification would be smaller if based on the total weight of the binding agent.

Gladrow '818 discloses heating an aqueous solution of formic or acetic acid at a temperature of 80 to 160^{o} F, corresponding to 26.6 to 71.1^{o} C during the course of 10 to 48 hours. See column 5, lines 27-35. Although the specific examples do not utilize this or any specific heating schedule or duration of heating, it is reasonable to conclude that the person having ordinary skill in the art would have followed the heating temperature and duration disclosed by Gladrow '818.

We further find that the ending pH is about 4 or less, in as much as it is well known that formic has a pH of 2.3 at 0.1N and acetic acid has a pH of 2.9 at 0.1 N[3] and we calculate that 25 weight percent of formic and acetic acid substantially exceeds 0.1 N solution of each acid.

Moreover, we find that the addition of 195 CC. of water, column 7, lines 16 and oven drying at 210 F, column 7, lines 18-19, constitutes the requisite washing and drying steps required by the claimed subject matter. The term "wash" in our view requires nothing more

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[3] See handbook of Chemistry and Physics, 45th Ed., The Chemical Rubber Co. , page D-73, Cleveland Oh, 1964.

than "to flush or moisten" or "to wet thoroughly."[4] Accordingly, the addition of 195 CC of water added to the dry mixture to form a thick paste is sufficient to meet either of the above definitions for "washing" as required by the claimed subject matter.

Based upon the above findings, we conclude that in order to arrive at the claimed subject matter a person having ordinary skill in the art would have to carefully pick and choose and combine various disclosures among the teachings of Gladrow '818 to obtain the catalyst composition of the claimed subject matter having each of the physical parameters and process conditions in amounts within the range claimed. While picking and choosing may be entirely proper in making an obviousness rejection under 35 U.S.C.
§ 103, it has no place in making a rejection under 35 U.S.C. § 102(b) for anticipation. ***In re Arkley***, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972). Furthermore, We find that Gladrow '818 does not provide a disclosure with sufficient specificity to constitute a description of the claimed composition within the purview of 35 U.S.C.
§ 102(b). ***In re Schaumann***, 572 F.2d 312, 317, 197 USPQ 5, 10 (CCPA 1978). Accordingly, we shall not sustain the rejection of the claims on appeal under 35 U.S.C.
§ 102 as anticipated by Gladrow '818.

Notwithstanding our finding supra regarding anticipation, it should be noted that rejections under 35 U.S.C. § 103 may be appropriate and proper where the subject

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[4] Webster's Ninth New Collegiate Dictionary, page 1330, Merriam-Webster, Inc., Springfield, MA, 1986.

matter claimed is not identically disclosed or described. Accordingly, we shall next consider the rejection of the claims over Gladrow '818 under 35 U.S.C. § 103. We found ***Supra*** that Gladrow '818 discloses each of the elements required by the claimed subject matter. Based upon the above findings, we conclude that it would have been obvious to the person having ordinary skill in the art to have prepared a catalyst suitable for fluidizable cracking within the scope of the claimed subject matter by following the disclosure of Gladrow '818. Therefore, the disclosure of Gladrow '818 is sufficient to establish a prima facie case of obviousness.

As to claim 18 which requires the presence of an aluminum salt of a carboxylic acid, it is our view, based upon the findings supra, that as the reference of record discloses the same components prepared under the same conditions required by the claim subject matter, aluminum salt would be formed to the same extent as in the claimed subject matter. It is well settled that when appellants' product and that of the prior art appears to be identical or substantially identical, the burden shifts to appellants to provide evidence that the prior art product does not necessarily or inherently possess the relied-upon characteristics of appellants' claimed product. ***In re Fitzgerald***, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980); ***In re Best***, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977). ***In re Spada***, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). On the record before us, however, no comparative evidence is present directed to differences, between the invention and Gladrow '818, in the formation of an aluminum salt of formic or acetic acid.

The appellant argues that their material is washed and dried so that no acid remains in the filtrate. See Brief, page 8. However, there is no such requirement in the claimed subject matter. Accordingly, any amount of washing disclosed by Gladrow '818, including the amount found supra, meets the requirement of the claimed subject matter.

The appellant further argues that Example 1 of Gladrow '818 discloses a 0.032 wt. % of acetic acid which would be insufficient to obtain the requisite aluminum salt or result in a final pH of less than 4. See Supplemental Reply Brief, page 2. We disagree with the analysis of the example in that the appellant has not determined either the molarity or normality of the composition which would be indicative of the initial pH. Moreover, the disclosure of Gladrow '818 is not limited to that of Example 1. Indeed, it is well settled that despite the fact that a patent discloses a multitude of effective combinations, it does not render any particular formulation less obvious. We find this particularly true because the claimed subject matter is used for the identical purpose taught by the prior art, i.e., a fluidizable cracking catalyst. See ***Merck & Co. Inc. v Biocraft Laboratories Inc.*** 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.) ***cert. denied***, 493, U.S. 975 (1989). Furthermore, in a section 103 inquiry the teaching of a preferred specific embodiment is not controlling since the disclosure of the entire prior art including the non preferred embodiments must be considered. Id.

The Rejections Over Gladrow '309 combined with Gladrow '818

As to the rejection of claims 11 through 18 over Gladrow '309 combined with Gladrow '818, we summarily affirm the rejection for the reasons stated ***supra***. We believe that Gladrow '309 is cumulative evidence of obviousness, does not undercut the specific teachings of Gladrow '818. ***In re Kronig*** 539 F.2d 1300, 190 USPQ 425, 427-428 (CCPA 1976).

Based upon the above analysis, we conclude that the teachings of Gladrow '818 in and of itself are sufficient to establish a ***prima facie*** case of obviousness with respect to the claimed subject matter. For these reasons and since the appellants have proffered no rebuttal evidence of nonobviousness, we sustain the examiner's section 103(a) rejection of the claimed subject matter over Gladrow '818 and Gladrow '309 combined with Gladrow '818. Accordingly, there is no further need to inquire into the disclosure of Gladrow '309.

The Rejection of Claim 19 Over Gladrow '309

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a ***prima facie*** case of unpatentability," whether on the grounds of anticipation or obviousness. ***In re Oetiker***, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On the record before us, the examiner relies upon a single reference to Gladrow '309 to reject the claimed subject matter and establish a ***prima facie*** case of anticipation and/or obviousness.

Our initial inquiry is directed to the scope of the claimed subject matter. During patent prosecution, claims are to be given their broadest reasonable interpretation consistent with the specification, and the claim language is to be read in view of the

specification as it would be interpreted by one of ordinary skill in the art. ***In re Morris***, 127 F.3d 1048, 1053-54, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); ***In re Zletz***, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); ***In re Sneed***, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983); ***In re Okuzawa***, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976).

Our construction of the subject matter defined by appellants' claim 19 is that the claimed subject matter is directed to a "modified" alumina. The appellant argues that Gladrow '309 does not disclose the modified alumina as defined by the present invention. We agree. The specification states, that, "[a]ccording to the invention, the modified alumina is prepared by means of a process involving contacting a hydrated alumina at a temperature in the range of 25° to 110° C for a period of 1 to 100 hours with an aqueous solution of a monocarboxylic acid having from 1 to 3 carbon atoms, preferably selected from the group consisting of formic acid, acetic acid and propionic acid, the end pH being about 4 or less, and isolating the solid reaction product."

The appellant properly directs the Board's attention to column 5, lines 1-17 of Gladrow '309 wherein the alumina of that invention, in contrast, is prepared by reacting sodium silicate with aluminum sulfate. We find that there is no disclosure or suggestion of treating or reacting alumina with a monocarboxylic acid having 1 to 3 carbon atoms.

Based upon the above analysis, we have determined that the examiner's legal conclusion of anticipation and obviousness is not supported by the facts. "Where the legal conclusion is not supported by [the] facts, it cannot stand." ***In re Warner***, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

DECISION

The rejection of claims 11 through 18 under 35 U.S.C. § 102(b) as anticipated by Gladrow '818 is reversed.

The rejection of claims 11 through 18 under 35 U.S.C.§ 103(a) as unpatentable over Gladrow '818 affirmed.

. The rejection of claim 19 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gladrow '309 is reversed.

The rejection of claims 11 through 18 under 35 U.S.C. § 103(a) as being unpatentable over Gladrow '309 combined with Gladrow '818 is affirmed.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

BRADLEY R. GARRIS Administrative Patent Judge	)
TERRY J. OWENS Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
PAUL LIEBERMAN Administrative Patent Judge	)

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Appeal No. 1998-1165
Application No. 08/410,586

APJ LIEBERMAN

APJ OWENS

APJ GARRIS

DECISION: AFFIRMED-IN-PART
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s):

Prepared: January 28, 2002

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OB/HD GAU

PALM / ACTS 2 / BOOK
DISK (FOIA) / REPORT